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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/815,423

**Applicant(s)**

IMAMURA ET AL.

**Examiner**

THU-NGUYET LE

**Art Unit**

2162

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 March 2008.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-20 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 01 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### **Response to Amendment**

1. This office action has been issued in response to amendment file 10 April 2007. Claim 4 has been amended. Claims 1-20 are pending in this Office Action. Accordingly, this action has been made FINAL.

### ***Specification***

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o).

Claims 5-8, 10, 14 recites the limitations of "a tangible computer readable medium". However, "a tangible computer readable medium" is not specified in the specification. Correction of the following is required.

Claims 15, 18-20 recite the limitations of "a computer usable medium". However, "a computer usable medium" is not specified in the specification. Correction of the following is required.

Claim 17 recites the limitations of "a computer-readable recording medium". However, "a computer-readable recording medium" is not specified in the specification. Correction of the following is required.

3. Pending applicants' response to the objection supra, examiner will interpret "a computer readable medium", "a computer usable medium", "a computer-readable recording medium" to include only physical storage devices such as CD-ROM, magnetic disks, and to exclude medium for carrying signals and other forms of propagation or transmission medium.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

5. Claims 1-20 are rejected under 35 U.S.C. 102(a) as being anticipated by Peng et al. (XPath Queries on Streaming Data, International Conference on Management of Data, Proceedings of the 2003 ACM SIGMOD international conference on Management of data, published on June 9-12, 2003).

***With respect to claim 1***, Peng discloses an extensible-markup-language Path Language (XPath) evaluating method comprising evaluating the XPath relevant to an extensible-markup-language (XML) document by use of a computer, said step of evaluating being carried out individually concerning inputted XML events, while subjecting the XML document to streaming processing, step of evaluating (page 431 2<sup>nd</sup> paragraph of [1.]; page 432 fig.1 example 1 and last paragraph), XPath method comprising:

a first step of serially inputting XML event strings constituting an XML document to be processed (page 433, 1<sup>st</sup> and 2<sup>nd</sup> paragraph of [2.1], 1<sup>st</sup> paragraph of [3.1], “accepts XML streams” which is “sequence of SAX events”);

a second step of serially evaluating the XPath respectively relevant to the inputted XML events while subjecting the XML document to streaming processing (page

432 fig.1 and example1, page 433 [2.2] and [3.]) and retaining information concerning a result of partial evaluation of the XPath in given storing means when the XPath is partially established with respect to a given XML event (last paragraph of page 432);

a third step of repeating the partial evaluation of the XPath along with the input of the XML event strings while considering the result of the partial evaluation retained in the storing means and evaluating that the XPath is established with respect to the XML document when the last part of the XPath is established (example 1 and last paragraph of page 432); and

judging establishment of the entire XPath while accumulating results of said partial evaluation enabling evaluation of the XPath by use of said streaming processing (page 432 fig.1 and example 1).

**Claim 2** is rejected for the reasons set forth hereinabove for claim 1 and furthermore Peng teaches the XPath evaluating method wherein the second step includes the steps of:

generating an automaton for expressing the XPath to be evaluated (page 432, 6<sup>th</sup> paragraph of column 1, "generate the hierarchical pushdown automaton corresponding to an XPath query"); and

evaluating the XPath partially by allowing transition of a state of the automaton based on inputted respective XML events and retaining a result of the partial evaluation as the state of the automaton (page 432 fig.1 and example 1, page 433 1<sup>st</sup> paragraph of [3.]).

**Claim 3** is rejected for the reasons set forth hereinabove for claim 1 and furthermore Peng discloses the XPath evaluating method wherein the second step includes the steps of:

generating a first stack which expresses the XPath to be evaluated with a string of stack elements (page 433, 1<sup>st</sup> paragraph of [3.], "a set of stack symbols"); and

generating a second stack for analyzing a nested structure of the XML document ("a set of input symbols") to be processed based on respective inputted XML events and then evaluating the XPath partially by comparing the first stack with the second stack (page 433, 1<sup>st</sup> paragraph of [3.], lines 5-10).

**Claim 4** is rejected for the reasons set forth hereinabove for claim 1 and furthermore Peng teaches the XPath evaluating method

wherein the second step includes the steps of:

generating an automaton for expressing the XPath to be evaluated (page 432, 6<sup>th</sup> paragraph of column 1, "generate the hierarchical pushdown automaton corresponding to an XPath query"); and

evaluating the XPath partially by allowing transition of a state of the automaton based on inputted respective XML events and retaining a result of the partial evaluation as the state of the automaton (page 432 fig.1 and example 1, page 433 1<sup>st</sup> paragraph of [3.]).

wherein the second step includes the steps of:

generating a first stack which expresses the XPath to be evaluated with a string of stack elements (page 433, 1<sup>st</sup> paragraph of [3.], "a set of stack symbols"); and

generating a second stack for analyzing a nested structure of the XML document ("a set of input symbols") to be processed based on respective inputted XML events and then evaluating the XPath partially by comparing the first stack with the second stack (page 433, 1<sup>st</sup> paragraph of [3.], lines 5-10).

wherein the second step includes the steps of:

serially constructing a document tree indicating a document structure of the XML document to be processed based on input of respective XML events (page 436, 1<sup>st</sup> paragraph of [4.], "hierarchical pushdown transducer (HPDT), in form of a binary tree"; figure 11, and 1<sup>st</sup> paragraph of [4.2], build an HPDT from an XPath query); and

evaluating the XPath along with construction of the document tree by use of the document tree including a part which has been constructed (figures 5-11, and example 5, page 436, 1<sup>st</sup> of [4.2]).

***With respect to claim 5***, Peng discloses an XPath evaluating apparatus comprising:

an evaluation executing unit being embodied in a tangible computer readable medium, and employed for inputting XML event strings constituting an XML document and serially evaluating the XPath with respect to each of XML events while subjecting the XML document to streaming processing, said serially evaluating being carried out individually concerning inputted XML events, while subjecting the XML document to streaming processing and while retaining information concerning a result of partial evaluation of the XPath when the XPath is partially established with respect to a given XML event, and evaluating that the XPath is established with respect to the XML

document when the last step of the XPath is established (page 433, 1<sup>st</sup> of [3], "Basic Pushdown Transducer", page 432 example 1); and

an XML event transferring unit being embodied in a tangible computer readable medium, and employed for inputting the XML event strings constituting the XML document to be processed and serially transferring the XML event strings to the evaluation executing unit (page 433, [2.1], "SAX parser"); and

a judging unit judging establishment of the entire XPath while accumulating results of said partial evaluation enabling evaluation of the XPath by use of said streaming processing (figures 5-11, and example 5, page 436, 1<sup>st</sup> of [4.2]).

**Claim 6** is rejected for the reasons set forth hereinabove for claim 5 and furthermore Peng teaches the XPath evaluating apparatus, further comprising:

an automaton generating unit being embodied in a tangible computer readable medium, and employed for generating an automaton which expresses the XPath to be evaluated (page 433, 1<sup>st</sup> of [3], "pushdown transducer"),

wherein the evaluation executing unit performs partial evaluation of the XPath by allowing a state of the automaton generated by the automaton generating unit to perform transition based on the XML events transferred from the XML event transferring unit, and retains a result of the partial evaluation as the state of the automaton (page 433, 1<sup>st</sup> paragraph of [3.]).

**Claim 7** is rejected for the reasons set forth hereinabove for claim 5 and furthermore Peng teaches the XPath evaluating apparatus, further comprising:



a stack generating unit being embodied in a tangible computer readable medium, and employed for generating a first stack which expresses the XPath to be evaluated with a string of stack elements (page 433, 1<sup>st</sup> paragraph of [3.], "a set of stack symbols"),

wherein the evaluation executing unit performs partial evaluation of the XPath by generating a second stack for analyzing a nested structure of the XML document subject to processing based on the XML events transferred from the XML event transferring unit and then comparing the first stack generated by the stack generating unit with the second stack (page 433, 1<sup>st</sup> paragraph of [3.], [3.1]).

***With respect to claim 8***, Peng teaches an XPath evaluating apparatus comprising:

a document tree constructing unit being embodied in a tangible computer readable medium, and employed for inputting XML event strings which constitute an XML document and serially constructing a document tree indicating a document structure of the XML document based on inputted XML events along with the input of the respective XML events while subjecting the XML document to streaming processing (page 434, [3.2], "building the BPDT" with figure 5-9);

an XML event transferring unit being embodied in a tangible computer readable medium, and employed for inputting the XML event strings which constitute the XML document to be processed and serially transferring the XML event strings to the document tree constructing unit (page 433, [2.1], "SAX parser"); and

an evaluation executing unit being embodied in a tangible computer readable medium, and employed for evaluating the XPath along with construction of the document tree by the document tree constructing unit being carried out individually concerning inputted XML events, while subjecting the XML document to said streaming processing, using the document tree with a part which has been constructed (page 436, 1<sup>st</sup> paragraph of [4.], "hierarchical pushdown transducer (HPDT), in form of a binary tree"; figure 11, and 1<sup>st</sup> paragraph of [4.2], build an HPDT from an XPath query, page 434 [3.2]); and

a judging unit judging establishment of the entire XPath while accumulating results of said partial evaluation enabling evaluation of the XPath by use of said streaming processing (figures 5-11, and example 5, page 436, 1<sup>st</sup> of [4.2])

**Claim 9** is rejected for the reasons set forth hereinabove for claim 8 and furthermore Peng teaches the XPath evaluating apparatus, wherein the evaluation executing unit retains information concerning a result of partial evaluation of the XPath when the XPath is partially established upon the evaluation of the XPath using the document tree (page 434, [3.3], "Buffer operation in BPDT").

**With respect to claim 10**, Peng teaches an information processing apparatus comprising:

an XML parser for analyzing an XML document to be processed and thereby generating XML event strings (page 433, [2.1]);

an XPath evaluating unit being embodied in a tangible computer readable medium, and employed for serially inputting the XML event strings generated by the

XML parser and evaluating the XPath with respect to each of inputted XML events by streaming processing, said step of evaluating being carried out individually concerning inputted XML events, while subjecting the XML document to streaming processing (page 433, 1<sup>st</sup> of [3], "PDA", page 432 example 1); and

an application executing unit being embodied in a tangible computer readable medium, and employed for inputting the XML events generated by the XML parser and performing processing with respect to the XML document configured by the XML events in response to an evaluation result of the XPath by the XPath evaluating unit (page 434, [3.2], "building the BPDT"),

wherein the XPath evaluating unit serially evaluates the XPath with respect to each of the XML events, retains information concerning a result of partial evaluation of the XPath when the XPath is partially established with respect to a given XML event, and judges that the XPath is established with respect to the XML document when the last step of the XPath is established (page 433, 1<sup>st</sup> of [3], "Basic Pushdown Transducer"); and

a judging unit judging establishment of the entire XPath while accumulating results of said partial evaluation enabling evaluation of the XPath by use of said streaming processing (figures 5-11, and example 5, page 436, 1<sup>st</sup> of [4.2]).

**Claim 11** is rejected for the reasons set forth hereinabove for claim 10 and furthermore Peng teaches the information processing apparatus, wherein the XPath evaluating unit generates an automaton for expressing the XPath to be evaluated, performs partial evaluation of the XPath by allowing transition of a state of the

automaton based on the XML events generated by the XML parser, and retains a result of the partial evaluation as the state of the automaton (example 1 and last paragraph of page 432, when author element in input stream is encountered, XPath is evaluated, and it satisfied the path /pub/book/author. However, book element, author elements are buffered to wait for later input stream events process).

**Claim 12** is rejected for the reasons set forth hereinabove for claim 10 and furthermore Peng teaches the information processing apparatus, wherein the XPath evaluating unit generates a first stack which expresses the XPath to be evaluated with a string of stack elements, generates a second stack for analyzing a nested structure of the XML document to be processed based on the XML events generated by the XML parser, and performs partial evaluation of the XPath by then comparing the first stack with the second stack (page 433, 1<sup>st</sup> paragraph of [3.], lines 5-10).

**Claim 13** is rejected for the reasons set forth hereinabove for claim 10 and furthermore Peng teaches the information processing apparatus, wherein the XPath evaluating unit serially constructs a document tree indicating a document structure of the XML document to be processed based on inputted XML events along with the input of the respective XML events generated by the XML parser, and evaluates the XPath by use of the document tree with a part which has been constructed (page 436, 1<sup>st</sup> paragraph of [4.], "hierarchical pushdown transducer (HPDT), in form of a binary tree"; figure 11, and 1<sup>st</sup> paragraph of [4.2], build an HPDT from an XPath query).

**Claim 14** is rejected on grounds corresponding to the reasons given above for claim 1. The claim 1 claims limitations of the XPath evaluating method while the claim

14 claims limitations of a program causing the computer to execute the procedure for carrying out the steps of claim 1.

**Claim 15** is rejected on grounds corresponding to the reasons given above for claim 1. The claim 1 claims limitations of the XPath evaluating method while the claim 15 claims limitations of an article of manufacture comprising computer readable program code means for causing a computer to effect the steps of claim 1.

**Claims 16, and 17** are rejected on grounds corresponding to the reasons given above for claim 1. The claim 1 claims limitations of the XPath evaluating method while the claims 16, 17 claim limitations of a program storage device readable by machine to perform the steps of claim 1.

**Claim 18** are rejected on grounds corresponding to the reasons given above for claim 5. The claim 5 claims limitations of the XPath evaluating apparatus while the claim 18 claims limitations of a computer program product for causing a computer to effect the XPath evaluating apparatus of claim 5.

**Claim 19** are rejected on grounds corresponding to the reasons given above for claim 8. The claim 8 claims limitations of the XPath evaluating apparatus while the claim 19 claims limitations of a computer program product for causing a computer to effect the XPath evaluating apparatus of claim 8.

**Claim 20** are rejected on grounds corresponding to the reasons given above for claim 10. The claim 10 claims limitations of the information processing apparatus while the claim 20 claims limitations of a computer program product for causing a computer to effect the information processing apparatus of claim 10.

***Response to Argument***

6. Applicants' arguments regarding the 102(a) rejection based upon Peng are not persuasive. The examiner respectfully traverses applicants' arguments.

With respect to applicants argument that Peng does not present an "evaluating method", the examiner refers applicants to page 432, 2nd paragraph. Peng discloses "our method for evaluating XPath queries over streaming data". Therefore, "evaluating method" is disclosed in Peng's reference.

With respect to applicants' argument that Peng does not anticipate "evaluating the XPath relevant to an extensible-markup-language (XML) document", the examiner refers applicants to page 431 [1.] 2<sup>nd</sup> paragraph. Peng discloses ***evaluating XPath over streaming XML***. Therefore, "evaluating the XPath relevant to an extensible-markup-language (XML) document" is taught in Peng's reference.

With respect to applicant's argument that Peng does not anticipation of "serially inputting XML event strings constituting an XML document to be processed", the examiner respectfully disagrees. In page 433 [2.1], Peng teaches ***the XML document is processed and generate a sequence of events***. Additional, [3.1] recites ***PDA accepts the streaming XML***. Therefore, "serially inputting XML event strings constituting an XML document to be processed" is taught in Peng's reference.

With respect to applicants argument that Peng does not anticipate "serially evaluating ", "inputted XML events while subjecting the XML document to streaming processing", and "XPath is partially established with respect to a given XML event", the examiner respectfully disagrees. The examiner refers applicants to 1<sup>st</sup> paragraph of [3.]

in page 433, as the explanation *supra*, the XML document is processed to generate a sequence of XML event strings. Fig.1 depicts XML event strings, page 432 example1: the process of evaluating the XPath query `/pub[year=2002]/book[price<11]/author` for the XML event strings (fig.1). In the example each event element of XML document is evaluated along with each location step in the Xpath `/pub/book/author`. The location step *pub* with predicate `[year=2002]` and *book* with predicate `[price<11]` (figure1 of example1) are fetched for evaluating. The first book element event, the author element event will be buffered until the sub event elements evaluated. After the predicate `[price<11]` of book location step is evaluated using the second price event element of the second book event element, the Xpath is partially established. Therefore, anticipate "serially evaluating ", "inputted XML events while subjecting the XML document to streaming processing", and "XPath is partially established with respect to a given XML event" are taught in Peng's reference.

With respect to applicants' argument that Peng does not anticipate "step of repeating the partial evaluation of the XPath along with the input of the XML event strings while considering the result of the partial evaluation retained in the storing means and evaluating that the XPath is established with respect to the XML document when the last part of the XPath is established", the examiner respectfully disagrees. The examiner refers applicants to the explanation *supra*. Additionally, after the predicate `[price<11]` of book location step is evaluated using the second price event element of the second book event element, the Xpath is partially established. The predicate `[year=2002]` of pub location path will be evaluated using year event element to complete

evaluating entire XPath. During the evaluation of the Xpath, the buffer is used to store the partial evaluation until the entire Xpath is evaluated. Therefore, the recited limitation is taught in Peng's reference.

With respect to applicants' argument that Peng does not anticipate "judging establishment of the entire XPath while accumulating results of said partial evaluation enabling evaluation of the XPath by use of said streaming processing", the examiner refers applicants to page 432 fig.1 and example 1 of "evaluating XPath queries over XML stream", page 433 1<sup>st</sup> paragraph of [2.2]. In the example, XPath "/pub/book/author" is evaluated if the XML stream data is satisfied the XPath. Peng discloses if the sequence elements in XPath matches to elements in document, each matched element is added to query result. Therefore, the recited limitation is taught in Peng's reference.

With respect to applicants' argument that "generating an automaton for expressing the XPath to be evaluated" because "page 432, 6<sup>th</sup> paragraph of column 1, apparently does not allude to **generate the hierarchical pushdown automaton corresponding to an XPath query**", the examiner respectfully disagrees. "**generate the hierarchical pushdown automaton corresponding to an XPath query**" is in page 432, 6<sup>th</sup> paragraph of column 1. Therefore, "generating an automaton for expressing the XPath to be evaluated" is taught in Peng's reference.

With respect to applicants' argument that Peng does not anticipate a step of "evaluating the XPath partially by allowing transition of a state of the automaton based on inputted respective XML events and retaining a result of the partial evaluation as the state of the automaton", the examiner respectfully disagrees. page 433, 1<sup>st</sup> paragraph of



[3.], Peng teaches for each input event from the input sequence (figure1 of example1) is fetched , the current state of PDT is changed and buffered the result. Therefore, the limitation is taught in Peng's reference.

With respect to applicants' argument that Peng does not anticipate a step of "generating a first stack which expresses the XPath to be evaluated with a string of stack elements", the examiner refers applicants to page 433, 1<sup>st</sup> paragraph of [3.], "a set of stack symbols". Therefore, the limitation is taught in Peng's reference.

With respect to applicants' argument that Peng does not anticipate a step of "generating a second stack for analyzing a nested structure of the XML document to be processed based on respective inputted XML events and then evaluating the XPath partially by comparing the first stack with the second stack", the examiner respectfully disagrees. In 1<sup>st</sup> paragraph of [3.] page 433, "a set of input symbol" (fig.1) is represent for "a nested structure of the XML document" as in claim limitation, and "the set of stack input symbols". Additionally, the example1 discloses the comparing each of events in the document to the each element in the XPath. Therefore, the limitation is taught in Peng's reference.

With respect to applicants argument regarding to claim 4 that Peng does not anticipate a step of "serially constructing a document tree indicating a document structure of the XML document to be processed based on input of respective XML events"; and "evaluating the XPath along with construction of the document tree by use of the document tree including a part which has been constructed". ***The examiner recites in the office action*** "serially constructing a document tree indicating a

document structure of the XML document to be processed based on input of respective XML events (page 436, 1<sup>st</sup> paragraph of [4.], “hierarchical pushdown transducer (HPDT), in form of a binary tree”; figure 11, and 1<sup>st</sup> paragraph of [4.2], build an HPDT from an XPath query); and evaluating the XPath along with construction of the document tree by use of the document tree including a part which has been constructed (figures 5-11, and example 5, page 436, 1<sup>st</sup> of [4.2]).

With respect to applicants’ argument regarding to claim 5 that Peng does not anticipate an element of “an evaluation executing unit”, ***the examiner recites in the office action*** “an evaluation executing unit.... (page 433, 1<sup>st</sup> of [3], “Basic Pushdown Transducer”)”.

With respect to applicant’s argument regarding to claim 6 that Peng does not anticipate an element of “an automaton generating unit”, ***the examiner recites in the office action*** “an automaton generating unit .... (page 433, 1<sup>st</sup> of [3], “pushdown transducer”)”.

With respect to applicants argument regarding to claim 7 that Peng does not anticipate an element of “a stack generating unit being embodied in a tangible computer readable medium, and employed for generating a first stack which expresses the XPath to be evaluated with a string of stack elements”, and “the evaluation executing unit performs partial evaluation of the XPath by generating a second stack for analyzing a nested structure of the XML document subject to processing based on the XML events transferred from the XML event transferring unit and then comparing the first stack generated by the stack generating unit with the second stack”. ***The examiner recites in***

**the office action** "a stack generating unit being embodied in a tangible computer readable medium, and employed for generating a first stack which expresses the XPath to be evaluated with a string of stack elements (page 433, 1<sup>st</sup> paragraph of [3.], "a set of stack symbols"), wherein the evaluation executing unit performs partial evaluation of the XPath by generating a second stack for analyzing a nested structure of the XML document subject to processing based on the XML events transferred from the XML event transferring unit and then comparing the first stack generated by the stack generating unit with the second stack (page 433, 1<sup>st</sup> paragraph of [3.], [3.1])."

With respect to applicants argument regarding to claim 8 that Peng does not anticipate "a document tree constructing unit being embodied in a tangible computer readable medium, and employed for inputting XML event strings which constitute an XML document and serially constructing a document tree indicating a document structure of the XML document based on inputted XML events along with the input of the respective XML events while subjecting the XML document to streaming processing; an XML event transferring unit being embodied in a tangible computer readable medium, and employed for inputting the XML event strings which constitute the XML document to be processed and serially transferring the XML event strings to the document tree constructing unit. **The examiner recites in the office action** "a document tree constructing unit being embodied in a tangible computer readable medium, and employed for inputting XML event strings which constitute an XML document and serially constructing a document tree indicating a document structure of the XML document based on inputted XML events along with the input of the respective

XML events while subjecting the XML document to streaming processing (page 434, [3.2], "building the BPDT" with figure 5-9); an XML event transferring unit being embodied in a tangible computer readable medium, and employed for inputting the XML event strings which constitute the XML document to be processed and serially transferring the XML event strings to the document tree constructing unit (page 433, [2.1], "SAX parser").

With respect to applicants argument regarding to claim 9 that Peng does not anticipate an element of "wherein the evaluation executing unit retains information concerning a result of partial evaluation of the XPath when the XPath is partially established upon the evaluation of the XPath using the document tree", ***the examiner recites in the office action*** "wherein the evaluation executing unit retains information concerning a result of partial evaluation of the XPath when the XPath is partially established upon the evaluation of the XPath using the document tree (page 434, [3.3], "Buffer operation in BPDT")".

With respect to applicants argument regarding to claim 10 that Peng does not anticipate "the XPath evaluating unit serially evaluates the XPath with respect to each of the XML events, retains information concerning a result of partial evaluation of the XPath when the XPath is partially established with respect to a given XML event, and judges that the XPath is established with respect to the XML document when the last step of the XPath is established", ***the examiner recites in the office action*** "the XPath evaluating unit serially evaluates the XPath with respect to each of the XML events, retains information concerning a result of partial evaluation of the XPath when the

XPath is partially established with respect to a given XML event, and judges that the XPath is established with respect to the XML document when the last step of the XPath is established (page 433, 1<sup>st</sup> of [3], "Basic Pushdown Transducer")".

With respect to applicants argument regarding to claim 11 that Peng does not anticipate "the XPath evaluating unit generates an automaton for expressing the XPath to be evaluated, performs partial evaluation of the XPath by allowing transition of a state of the automaton based on the XML events generated by the XML parser, and retains a result of the partial evaluation as the state of the automaton", ***the examiner recites in the office action*** "the XPath evaluating unit generates an automaton for expressing the XPath to be evaluated, performs partial evaluation of the XPath by allowing transition of a state of the automaton based on the XML events generated by the XML parser, and retains a result of the partial evaluation as the state of the automaton (example 1 and last paragraph of page 432, when author element in input stream is encountered, XPath is evaluated, and it satisfied the path /pub/book/author. However, book element, author elements are buffered to wait for later input stream events process)".

With respect to applicants argument regarding to claim 13 that Peng does not anticipate "the XPath evaluating unit serially constructs a document tree indicating a document structure of the XML document to be processed based on inputted XML events along with the input of the respective XML events generated by the XML parser, and evaluates the XPath by use of the document tree with a part which has been constructed", ***the examiner recites in the office action*** "wherein the XPath evaluating unit serially constructs a document tree indicating a document structure of the XML

document to be processed based on inputted XML events along with the input of the respective XML events generated by the XML parser, and evaluates the XPath by use of the document tree with a part which has been constructed (page 436, 1<sup>st</sup> paragraph of [4.], "hierarchical pushdown transducer (HPDT), in form of a binary tree"; figure 11, and 1<sup>st</sup> paragraph of [4.2], build an HPDT from an XPath query)".

### ***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **THU-NGUYET LE** whose telephone number is (571)270-1093. The examiner can normally be reached on 6:00-2:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached on 571-272-4107. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2166

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04 June 2008  
/Thu-Nguyet Le/  
Examiner, Art Unit 2162

/Khanh B. Pham/  
Primary Examiner, Art Unit 2166